

8. A person of ordinary skill in the art, using the teachings of the present invention as well as techniques well known to those of skill in the art, would be able to construct a microorganism using a leader sequence selected from those disclosed in the specification or from leader sequences that were well known to those of skill in the art.

Continuing, the Examiner states that the issue is that Applicants' teach that the production of full-length PTH in a microorganism was not previously possible since PTH is degraded. The present application details a method for overcoming the degradation problems experienced in the past and also provides examples of expression systems utilizing the disclosed method. Applicants are not limited by their enumerated examples. Therefore, the specification provides sufficient enablement for the claimed invention, and withdrawal of this ground for rejection is respectfully requested.

III. Obviousness-Type Double Patenting Rejections

A. Claims 38, 39, and 41 are rejected under the judicially created doctrine of obviousness-type double patenting as being allegedly unpatentable over claim 10 of U.S. Patent No. 5,420,242. In the near future, Applicants will provide a terminal disclaimer which disclaims the terminal part of the term of any patent granted on the above-identified application which would extend beyond the full statutory term, as presently shortened by any terminal disclaimer, of U.S. Patent No. 5,420,242. Therefore, this ground for rejection is moot.

B. Claims 38, 39, and 41 are rejected under the judicially created doctrine of obviousness-type double patenting as being allegedly unpatentable over claims 1-38 of U.S. Patent No. 5,010,010. In the near future, Applicants will provide a terminal disclaimer which disclaims the terminal part of the term of any patent granted on the above-identified application which would extend beyond the full statutory term, as presently shortened by any terminal disclaimer, of U.S. Patent No. 5,010,010. Therefore, this ground for rejection is moot.

C. Claims 38 and 39 are rejected under the judicially created doctrine of obviousness-type double patenting as being allegedly unpatentable over claims 1 and 2 of U.S. Patent No. 6,146,852. In the near future, Applicants will provide a terminal disclaimer which disclaims the terminal part of the term of any patent granted on the above-identified application which would extend beyond the full statutory term, as presently shortened by any terminal disclaimer, of U.S. Patent No. 6,146,852. Therefore, this ground for rejection is moot.

IV. Statutory-Type Double Patenting Rejections

Claim 41 is rejected under 35 U.S.C. § 101 as allegedly claiming the same invention as that of claims 1 and 2 of U.S. Patent No. 6,146,852. Applicants respectfully traverse and request reconsideration and withdrawal of the rejection.

In determining whether a statutory basis for a double patenting rejection exists, the question to be asked is: Is the same invention being claimed twice? "Same invention" means identical subject matter. *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1984); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957). As discussed below, claim 41 does not claim the *same* invention as that of claims 1 and 2 of U.S. Patent No. 6,146,852.

Claims 1 and 2 of U.S. Patent No. 6,146,852 are directed to a process for producing recombinant PTH(1-84) comprising providing a yeast microorganism, culturing the yeast microorganism to allow expression of PTH (1-84), and purifying the resultant PTH (1-84) protein. The claims require that: (1) the yeast microorganism comprise a DNA sequence encoding the *Saccharomyces* mating factor $\alpha 1$ leader sequence as a leader sequence, wherein the leader sequence lacks a STE13 recognition site, and (2) a DNA sequence encoding PTH (1-84) protein, wherein the DNA encoding the leader sequence and the DNA encoding the PTH (1-84) protein are operably linked.

In contrast, claim 41 of the present application is directed to a generic method for obtaining intact hPTH (1-84) comprising obtaining a cell free medium and treating the

medium to isolate intact hPTH (1-84). The claims require that that cell free medium is obtained following growth of a microorganism transformed to express a DNA sequence encoding a fusion product in which hPTH (1-84) is fused at its N-terminus with a leader sequence. Claim 41 *does not* require that the microorganism is yeast, nor does claim 41 require that the leader sequence is saccharomyces mating factor α 1 leader sequence lacking a STE13 recognition site. Therefore, claim 41 of the present application does not claim the *same* invention as that of claims 1 and 2 of U.S. Patent No. 6,146,852.

As discussed in section 804 of the MPEP, a reliable test for double patenting under 35 U.S.C. § 101 is whether a claim in the application could be literally infringed *without* literally infringing a corresponding claim in the patent. *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970). In other words, is there an embodiment of the invention that falls within the scope of one claim, but not the other? If there is such an embodiment, then identical subject matter is not defined by both claims and statutory double patenting would not exist. Since claim 41 is directed to a generic method for obtaining intact hPTH (1-84) and does not require that the microorganism is yeast or that the leader sequence is Saccharomyces mating factor α 1 leader sequence lacking a STE13 recognition site, there are embodiments that fall within the scope of claim 41 that *do not* fall within the scope of claims 1 and 2 of U.S. Patent No. 6,146,852. Therefore, claim 41 of the present application does not claim the same invention as that of claims 1 and 2 of U.S. Patent No. 6,146,852. Withdrawal of this ground for rejection is respectfully requested.

V. Claim Rejections - 35 U.S.C. § 102

**A. Rejection of Claims 38 and 39 as being
Allegedly Anticipated by Breyel et al.**

Claims 38 and 39 are rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by Breyel et al. The Examiner asserts that Breyel et al. teaches expression of hPTH (1-84) in *E. coli* and that an extract was obtained. The Examiner states that the extract obtained by Breyel et al. was a cell-free extract because the supernatant of sonicated and centrifuged cells was used. The Examiner concludes that the extract obtained by Breyel et al. is the same as

the cell-free medium of the present invention. Applicants respectfully disagree with the Examiner's assertion and request reconsideration and withdrawal of the rejection.

The extract obtained by Breyel et al. is distinct from the cell-free medium of the claimed invention. To obtain the extract of Breyel et al., PTH producing *E. coli* were lysed using sonication. The cell lysate was centrifuged and the supernatant containing PTH was collected. See Breyel et al. at page III-364. In contrast, the cell free medium of the claimed invention does not involve lysing the cells. Rather, the PTH is secreted into the medium by the microorganism.

The extract obtained by Breyel et al. and the cell-free medium of the claimed invention are distinct because while the extract of Breyel et al. comprises all soluble contents of the lysed cells, the cell-free medium of the claimed invention *only* contains compounds secreted by the cell. Therefore, the claimed invention is not anticipated by Breyel et al., and withdrawal of this ground for rejection is respectfully requested.

**B. Rejection of Claims 38, 39 and 41 as being
Allegedly Anticipated by Gautvik et al.**

Claims 38, 39, and 41 are rejected under 35 U.S.C. § 102(e) as being allegedly anticipated by Gautvik et al. (U.S. Patent No. 6,146,852). Applicants respectfully traverse this ground for rejection.

The '852 patent is not valid prior art under 35 U.S.C. § 102(e) against the claimed invention because the '852 patent is not "by another". The inventors named on the face of the '852 patent are Kaare M. Gautvik, Peter Alestrom, Tordis Beate Oyen, and Odd Stokke Gabrielsen. Similarly, the inventors of the claimed invention are Kaare M. Gautvik, Peter Alestrom, Tordis Beate Oyen, and Odd Stokke Gabrielsen. Since 35 U.S.C. § 102(e) prior art must be by another and the '852 patent is not by another, the '852 patent is not valid prior art against the claimed invention. Therefore, Applicants respectfully request withdrawal of the rejection.

CONCLUSION

As the above-presented amendments and remarks address and overcome all of the rejections presented by the Examiner, withdrawal of the rejections and allowance of the claims are respectfully requested.

If the examiner has any questions concerning this application, he or she is requested to contact the undersigned.

Respectfully submitted,

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